VOLUME IV NUMBER 4

JOURNAL
OF
FARM ECONOMICS

OCTOBER, 1922

CONTENTS

	Page
The Decline of Prices of Cereals. ALONZO ENGLEBERT TAYLOR	193
Notes on Farm Accounting in Some European Countries. G. F. WARREN	209
The Crop Reporting System of Europe. WILLIAM F. CALLANDER	215
Expansion of Live Stock Reporting by the Bureau of Agricultural Economics. WILLIAM F. CALLANDER	229
Reviews	232
In Memoriam: Walter Frederick Handschin	237
Farm Economic News Notes	238

Published Quarterly by
THE AMERICAN FARM ECONOMIC ASSOCIATION
(Formerly the American Farm Management Association)

Price: Single Copies, 50 Cents

Entered as second-class matter, December 11, 1919, at the post office at Lancaster, Pa., under the Act of March 3, 1879

The American Farm Economic Association

President—B. H. HIBBARD, University of Wisconsin, Madison, Wis.
Vice-President—J. A. FOORD, Massachusetts Agricultural College, Amherst, Mass.
Secretary-Treasurer—J. I. FALCONER, College of Agriculture, Columbus, Ohio.

COMMITTEES.

Investigation—

Chairman: H. E. ERDMAN, Washington, D C.
THEO. MACKLIN, Madison, Wis.
R. H. WILCOX, Washington, D. C.
A. LEITCH, Guelph, Canada.

Extension—

Chairman: H. M. DIXON Washington, D. C.
M. R. BENEDICT, Brookings, S. Dak.
L. ROBERTSON, La Fayette, Ind.
C. E. LADD, Ithaca, N. Y.
CARL ARNOLD, Columbus, Ohio.

Terminology—

Chairman: T. N. CARVER, Cambridge, Mass.
L. C. GRAY, Washington, D. C.
IVAN WRIGHT, Urbana, Ill.

Experiment Funds and Work—

Chairman: T. P. COOPER, Lexington, Ky.
ANDREW BOSS, St. Paul, Minn.
F. D. FARRELL, Manhattan, Kans.
H. W. MOOREHOUSE, Chicago, Ill.

Teaching—

Chairman: W. D. NICHOLS, Lexington, Ky.
ERIC ENGLUND, Manhattan, Kans.
J. D. BLACK, St. Paul, Minn.
H. M. ELIOT, East Lansing, Mich.
G. F. WARREN, Ithaca, N. Y.

THE JOURNAL OF FARM ECONOMICS, EDITORIAL STAFF.

Editor—O. C. STINE, Bureau of Agricultural Economics, Washington, D. C.
Associate Editors—H. M. DIXON, Bureau of Agricultural Economics, Washington, D. C.
FRANK APP, New Brunswick, N. J.
THEODORE MACKLIN, Madison, Wis.

Subscriptions and Membership:

J. I. FALCONER, *Secretary-Treasurer*, College of Agriculture, Columbus, Ohio.

JOURNAL
OF
FARM ECONOMICS

VOL. IV. OCTOBER, 1922 No. 4

THE DECLINE OF PRICES OF CEREALS

By

ALONZO ENGLEBERT TAYLOR

FOOD RESEARCH INSTITUTE, STANFORD UNIVERSITY, CALIF.

The National Agricultural Conference, held in Washington the last week in January, was so engrossed with the program of remedies that it was not able to give exhaustive attention to diagnosis. A great deal of ground had been covered in the congressional hearings before the Joint Commission of Agricultural Inquiry. Certain ills of the farmer date from the last century; others developed during the war; some were the consequence of the boom; and several were the back-wash of the down-wave of the business cycle. It was difficult to segregate these disabilities. In any event, such segregation would have entailed exhaustive quantitative researches, for which the Conference had not time. It seemed necessary for the Conference to adopt a program of remedies that resembled a "shotgun prescription." As in the case of most shotgun prescriptions designed to relieve a complex of symptoms, some of the remedies seem incompatible. Prices of cereals were rising at the time of the meeting of the Conference. Since then prices have again declined, though not to the low level of 1921.

The basic fact of the economics of the world during 1920 and 1921, from the standpoint of price, was that in each country the gold prices of raw materials declined precipitously. Price decline began in the fall of 1919 in some countries with some commodities; and the movement lasted in some coun-

tries with some commodities until the fall of 1921. The decline was from a peak of very high prices. The ascent of prices in this country occurred in three stages. The first result of declaration of war in 1914 was a transient fall in prices. This was followed by gradual increase in prices until the entrance of the United States into the war. From this date, prices of raw materials were fairly stabilized, though trending gradually upwards, despite indirect governmental control. Following the armistice a transient decline of price occurred. This was succeeded by a rapid increase, the peak varying for most commodities from two and one-half to three and one-half times the pre-war figures. The decline was more spectacular than the ascent, partly because it occurred in a shorter time and partly because of the attendant palsy of industrial processes. There is more exhilaration in soaring than in falling.

The fundamental problem for agriculture concerns the *relative* decline in prices. The data of previous business cycles indicate that at such times prices of raw materials fall disproportionately, decline in the price of semi-finished goods lags, adjustment in wholesale prices of semi-finished and finished goods lags still more and decline in retail prices lags most of all. This may be termed the hysteresis of the business cycle. The experience of previous business cycles forecasted a period of a number of months during which the farmer inevitably would see his prices decline to a low level, while the prices of finished goods he desired remained high.

Throughout public discussions two assumptions appear, seldom stated openly but suggested inferentially. Indeed, they are rather more taken for granted than predicated. The first is that the agricultural products of the American farmer were hit particularly hard; the second, that the decline in price of agricultural products exceeded that of minerals, metals and forest products. With these propositions predicated, the farmer was revealed as the victim of particularly unfortunate calamity, entirely apart from his admitted disability in the matter of credits.

The first proposition has little foundation. Raw agricultural products did not suffer comparable declines in price. In each country some declined more than others, and prices in different countries displayed fluctuations. The heaviest decline in the price of a raw material was observed in rubber.

The enormous expansion of rubber plantations and the defencelessness of labor in rubber countries are two factors in explanation of this. It would require an intensive study of each raw material, from the commodity point of view, to explain relative variations in decline. Sometimes an explanation is easy. For example, the price of zinc declined more than the price of lead. One reason lies in two particular uses of these two metals. A prominent use of zinc is in the manufacture of automobile tires; a prominent use of lead is in the lining of coffins. Hard times made a great difference in the consumption of tires but little difference in the need for coffins. The statistical data of the world are not now adequate to explain variations in declines of price of different agricultural commodities in the same country and in the world.

The general idea that prices of agricultural raw materials declined more than those of minerals and metals is more susceptible of analysis. Even here, however, a comprehensive investigation is probably not yet possible. In the nature of their utilization, despite the fact that each metal has certain uses in which it appears alone, fabrications of metals are coordinated with each other, with fibres and wood, and rest on coal. The coal situation of Europe since the armistice has been kept in an abnormal condition by the coal clauses of the Treaty of Versailles, disorganization in Russia, conflict in Upper Silesia, the strikes in the United Kingdom and the temporary economic abnormalities resulting from the transfer of the Saar and Alsace-Lorraine to France. During the war many civilian uses of iron and the non-ferrous metals were restricted by governmental ruling and blockade. Efforts at repair of depletion have tended to make interpretation of relations of production and consumption unclear. When all is said, however, despite the high price of coal in the United States during the period when the prices of other raw materials were falling rapidly, it cannot be effectively argued that agricultural raw materials suffered decline in price of a different order of magnitude from that suffered by minerals and metals. Coal and wood constitute special cases.

The following table presents the data for relative prices of the chief cereals and four non-ferrous metals. The average 1913 price is given as 100. The peak prices were the highest wholesale market prices. The lowest prices were the lowest wholesale market prices in 1921. The figures are drawn from

the several issues of Survey of Current Business, Department of Commerce.

	Pre-war price	Peak price	Low price	
		a	b	b/a
Wheat	100	302	119	0.39+
Rye	100	451	139	0.30+
Corn	100	331	75	0.22+
Oats	100	296	90	0.30+
Barley	100	325	89	0.27+
Copper	100	230	75	0.32+
Lead	100	261	100	0.38+
Zinc	100	386	80	0.20+
Tin	100	224	60	0.27+

For comparison let it be recalled that the peak of the wholesale index number of all commodities stood at 272, and the lowest point in 1921 was 148. The gross value of all agricultural products declined from the 100 of 1919 to 76 in 1920 and 52 in 1921. The comparison between prices of cereals and metals is not exact, in that wholesale prices of metals are practically identical with producers' prices, while wholesale prices of cereals are considerably higher than prices paid to growers.

The effect of decline in price can not be determined by direct comparison, but must be considered in connection with cost of production. Even though two raw materials decline comparably in price, if the relative cost of production of one has been higher than that of the other, this has the same effect as disproportionate price decline. That the costs of production of the crops of 1919, 1920 and 1921 were high admits of demonstration. That they were relatively higher than the costs of production of minerals, metals, coal and forest products may be susceptible of demonstration, but I am acquainted with no such demonstration.

In comparing price declines between different commodities, variables lie for the most part in five directions :(*a*) Foreign demand; (*b*) the domestic market; (*c*) curtailability of production; (*d*) situation of stocks; and (*e*) state of credits.

The foreign demand is direct or indirect. The direct demand is reflected in exportation of the material in the raw or

fabricated state. The indirect demand is reflected in domestic consumption called into being as a result of foreign demand for other American goods. For example, exportation of automobiles might result in increased consumption of foods in the manufacturing centres.

Domestic demand includes consumption of agricultural products as foodstuffs and as industrial materials; the former quite inflexible, the latter flexible.

Curtailability of production means the power to reduce supply when demand declines and prices fall.

Situation of stocks means volume of stocks of goods on hand contrasted with consumption.

State of credit reflects the ability of producers and holders of raw material to keep them from the market. Forced liquidation of materials, when loans against them cannot be continued at the option of the borrower, may have the same result as new production of the material.

The writer has searched through the data of the various materials to find a metal well suited for comparison with a cereal. Only with a cereal are the relations simple enough to permit of comparison. One must select materials for which official data are available. It is necessary that the materials be common articles with a wide degree of use. In theory, one may select two materials possessing the same variables and contrast the declines in prices. Or one may select materials with comparable declines in prices and contrast the variables. It is possible to combine these procedures in an analysis of the data of copper, wheat and corn.

Strictly speaking, corn is preferable to wheat, because the forms of consumption are more manifold and agricultural production less specialized. Wheat (outside of durum wheat that has its own price relations) has only one prime use, the manufacture of flour. Seed, flour milling and export trade comprise the picture of wheat, apart from a few breakfast foods and the use of tailings and low grade wheat as animal feed. Corn on the other hand has many uses. Four-fifths of the crop is consumed on the farm. Of the portion that leaves the farm, the final products in the shape of consumers' goods extend over a varied field. The corn used on the farm is also employed for many uses. Corn is used as feed for young animals, breeding stock, work animals, dairy cows, for hogs for the production of pork and for cattle for the production of beef. Con-

siderable corn is employed in the manufacture of industrial alcohol. The corn-products factories separate corn into an edible oil, glucose, starch, hominy, gluten, a soap stock and a feed. Thus we find the uses of corn spread over a variety of agricultural and industrial processes.

Copper, like corn, is marketed largely as a producer's goods. Little copper reaches the hands of the ultimate consumer as copper articles, unmixed with other materials. The largest uses of copper are in transmission wires, the fabrication of electrical apparatus and equipment, in alloys and bearing metals, as copper salts in technical, chemical and dyeing operations, and in a variety of machines, tools and utensils. We are importers as well as exporters of copper. The imports of copper are largely in the state of raw material, produced in mines under the control of, or the actual property of, American copper producers. The exportation is largely in the form of producers' goods. We are importers and exporters of corn. The import of corn is largely for use on the Atlantic seaboard, made possible by low cost of production in Argentina and cheap ocean freight rates. The corn products companies have, however, a particular reason for the importation of Argentine corn, since it is richer in fat than the maize of this country. Our exports of corn are particularly as feed to Canada and Europe, as food to Mexico and the West Indies and as corn products quite generally. We import and export wheat. Apart from the border trade, we import hard Canadian wheat as a premium high-gluten wheat. From the Atlantic and Gulf ports we export the general price run of flour wheat, durum wheat, high grade and clear flours. From the western coast we export soft wheat and flour to the Orient.

The data, drawn from the Departments of Agriculture, Commerce and Interior, are presented in the table below. The value indices are not drawn from wholesale index numbers or census index numbers. The valuations represent the estimates of the Department of Agriculture and the Department of the Interior for the production of the year. A too literal use of the figures for value must not be made, because the viewpoint in the determination of the figures was not identical for the grains and for copper. With qualifications, these figures may be properly employed for purposes of general comparison.

COPPER*

	1919 Thousands	1920 Thousands	1921 Thousands
Production smelter copper (pounds)	1,286,419	1,209,061	505,586
New refined copper—			
(a) foreign and domestic	1,805,307	1,634,909	1,020,027
(b) domestic	1,433,486	1,182,423	609,414
Imports	429,388	485,668	350,383
Exports	516,628	624,054	628,805
Net exports	87,240	138,386	278,422
Stock at beginning of year	180,000	631,000	659,000
Stock at end of year	631,000	659,000	459,000
Withdrawn on domestic account (apparent consumption)	914,472	1,053,838	610,989
Net export and withdrawal on domestic account	1,001,712	1,192,224	889,411
Value domestic production	$239,274	$222,467	$65,221
Production index (1919 = 100)			
(a) domestic smelter	100	94	39
(b) domestic refined	100	82	42
(c) domestic and foreign	100	90	56
Disposal index (1919 = 100)	100	119	89
Consumption index (1919 = 100)	100	115	66
Value index (1919 = 100)	100	93	27

CORN†

Production (bushels)	2,816,318	3,230,532	3,081,250
Imports	11,213	7,784	164
Exports	11,193	17,761	129,055
On farms on following March 1	1,045,575	1,546,832	1,313,120
Shipment out to following March 1	470,328	705,481	590,505
Available for consumption (carry-over disregarded	2,816,338	3,220,555	2,952,360
Value of crop	$3,781,000	$2,150,000	$1,303,000
Production index (1919 = 100)	100	114	109
Value index (1919 = 100)	100	56	34

WHEAT†

Production (bushels)	968,279	833,027	794,893
Import (wheat and flour)	7,984	39,411	27,632
Export (wheat and flour)	267,305	307,629	355,548
Net export (wheat and flour)	259,321	268,219	327,916
On farms on following March 1	169,904	217,037	131,136
Shipment out to following March 1	591,552	491,035	489,413
Available for consumption (carry-over disregarded)	708,958	564,808	466,977
Value of crop	$2,080,000	$1,197,000	$737,000
Production index (1919 = 100)	100	86	82
Value index (1919 = 100)	100	57	35

*Data drawn from Monthly Summary of Foreign Commerce, Department of Commerce, and from Production of Copper in the United States, issued in April, 1922, Department of the Interior.

†Data drawn from final crop estimates of Department of Agriculture; from Weather, Crops and Markets, Vol. 1, Nos. 11 and 17, 1922; and from Monthly Summary of Foreign Commerce, Department of Commerce.

The value index number for copper in 1920 was less than 10 per cent below that of 1919, but the index number for 1921 fell to almost one-fourth the figure of 1919. In the case of corn the value index number for 1920 fell to nearly one-half the figure for 1919 and further descent in 1921 brought the figure to practically one-third of the figure of 1919. The value index numbers for wheat were close to those for corn; a fall in 1920 to nearly one-half the figure for 1919, and further descent in 1921 to practically one-third of the level of 1919. The curve of descent with copper did not decline so precipitously as in the case of corn and wheat, but reached finally a slightly lower level. For purposes of general comparison therefore, particularly with respect to the situation in 1921, we may say that the value index numbers of copper, corn and wheat displayed comparable behavior. Let us now contrast the variables.

(*a*) *Foreign demand.* The net exports of copper rose from 87 million pounds in 1919 to 138 million in 1920 and 278 million pounds in 1921. The net export of corn rose from the nominal figure of 11 million bushels in 1919 to 18 million bushels in 1920, and soared in 1921 to 129 million bushels. The net export of wheat was high in 1919 at 267 million bushels, rose in 1920 to 307 million bushels and in 1921 reached 355 million bushels. These exports can not be compared directly in terms of index numbers, because of different relations with consumption and stocks. In the case of copper, increase in export did not make much impression on stocks, despite decline in production, because domestic consumption had slumped heavily. In the case of corn, the phenomenal export unquestionably had an influence on the grain exchanges, but the actual volume of increased export—when contrasted for example with 20 per cent of the crop, the amount that commonly leaves the farm, or with the figure for total crop—is small. In 1921, increased export of corn over 1920 did not have the effect of bringing the figure for shipment off the farm last year to the figure attained the year before. In the case of wheat, the net export in 1919 was 27 per cent of the crop, in 1920 35 per cent, and in 1921 45 per cent of the crop. Obviously such exports were possible only with large carry-over stocks in the country. The export in 1920 did not suffice to reduce the figure on the farms on

March 1 to the level of 1919 nor to increase the figure for shipment out from the farm to the level of 1919. But for 1921, the figure for wheat on the farm March 1, 1922, had fallen below the figure even for 1919, while the figure for shipment out was maintained on the level of 1920. The figures for wheat available for consumption indicate rapid decrease in stocks during the three years. The figure for 1921, 467 million bushels, contains a statistical error. The consumption of wheat in 1921 was undoubtedly more than 467 million bushels. The behavior of wheat on the Chicago Exchange in the closing days of May, 1922, demonstrated that we have had in the country more wheat than was statistically reported. Liverpool price movements have the same meaning.

All in all, explanation for price decline is not to be found in the figures for export, in foreign demand. European tactics in buying in the United States were however designed to "bear" prices. Europe could have secured elsewhere in the world a third of the wheat she secured from us, and all the corn she took could have been replaced by corn or other feed from other countries. Europe made these purchases here because the prices—credits and other conditions of payment considered—were cheaper than elsewhere. Europe needed copper sorely and was able to buy freely because it was cheap.

(*b*) *Domestic demand.* Copper withdrawn on domestic account rose about 10 per cent from 1919 to 1920. This was due in part to repair of depletion of civilian needs for copper, following the restrictive policy of the War Industries Board. In part, it reflected new constructions that had been postponed by war. In 1921, however, consumption of copper slumped, falling to about 65 per cent of the figure for 1919. Some of this copper remained in the hands of manufacturers and did not appear as finished goods. Copper demand for new construction is elastic, but demand for repair quite inelastic. In the case of corn, it is difficult to define consumption in a comparable manner. We produced practically the same amount of meat in each of the three years. But with the count of animals declining, a portion of this out-turn represented liquidation of husbandry rather than productive feeding operations. The operations of feeders were reduced in 1920 and in 1921 from the level of 1919. The figures for shipments of animals through reporting stockyards corroborate this state-

ment. Work horses consumed less corn in 1921 than in 1920 and 1919, because of the widespread decline of industries in the cities. The figure for corn on farms increased sharply from March 1, 1920, to March 1, 1921, but decreased some 200 million bushels between that date and March 1, 1922. These changes corresponded roughly with fluctuations in the crop yields. The shipments out were considerably increased in 1920 over 1919, but declined again in 1921, though not to the level of 1919. All in all, it seems clear that a reduction in corn consumption occurred, though obviously not to the extent observed in the case of copper. In the case of wheat, the figures are more impressive than in the case of corn, but they prove reduced consumption entirely too well. The amount available for consumption, which in the case of wheat might approximate the amount actually consumed, fell progressively during 1919, 1920 and 1921, reaching in the latter year a figure too low for credence. Records of flour mills in 1920 indicated a low out-turn, following heavy production in the last half of 1919. In 1921 this was much improved and the figure for flour in 1921 does not check with the figure given for wheat available for consumption. The figures for flour production for 1919, 1920 and 1921 do not demonstrate a noteworthy reduction in flour consumption. The carry-over of wheat, that has been necessarily disregarded in the table, furnishes the explanation. In the judgment of the writer, when the situation is checked up a year or two hence, it will be evident that there have been fifty million bushels more wheat in the country than now estimated. Even taking the figures as they are, decline in domestic demand for wheat did not fall below the level of withdrawal on domestic account for copper. In each case, quantitative evidence is clear that decline in domestic demand occurred with all three materials and we take it for granted that this was reflected in price. The resultant declines in price do not bear comparison.

(*c*) *Curtailability of production.* Here we encounter a radical difference. In the case of copper, production is centralized. Mines can be shut down on short notice; smelters may be closed, leaving ore untreated; and smelter copper may be allowed to pile up unrefined. The production of domestic smelter copper was practically the same in 1919 and 1920, but fell in 1921 to below 40 per cent of the level of 1919. The

refining of domestic smelter copper was reduced to about the same level. Imported smelter copper was refined to a somewhat larger extent. The production index number of domestic and foreign copper was 56. Under "disposal index number" is meant the disposition of copper on hand. The metal disposed of in 1920 was 20 per cent more than in 1919, but in 1921 fell to 89 per cent. In other words, the sales held up quite well, while production was heavily curtailed.

In the case of corn, the crops of 1920 and 1921 were both appreciably larger than the crop of 1919. The wheat crop of 1920 was 86 per cent of that of 1919, in 1921 82 per cent. This was curtailment by nature rather than by man. But even here the figure of 82 per cent contrasts glaringly with the production indices of copper. This is brought out still more clearly if one inspects the ratio of production index to value index. This in the case of copper is 0.69; in the case of wheat 0.42; and in the case of corn 0.31. It is clear that curtailment of out-turn of copper materially reduced the stocks while uncurtailed crops, particularly in the case of corn, had the effect of a glut in the market.

(*d*) *Situation of stocks.* In a normal fluid market, the state of stocks determines to a certain extent the position of the vendor and measures the extent to which a market can be called a buyer's market. Stocks of copper were more than trebled from 1919 to 1920 and rose still further in 1921. Stocks of corn, as represented by the figure under "available for consumption" rose somewhat in 1920 over 1919 as expression of a large crop, and declined slightly in 1921, as expression of a smaller crop. Stocks of corn, however, exhibited no increase comparable to the increase in copper. In the case of wheat stocks, as given under "available for consumption," there was a steady decline, though not to the extent indicated in the figures. Stocks on farms rose 29 per cent in 1920 over 1919 but fell in 1921 to 77 per cent of the level of 1919. Wheat shipped out on March 1 was a hundred million bushels less in 1920 than in 1919, and stood about the same in 1921. In the case of wheat and corn, no matter how viewed, stocks did not accumulate as statistical basis for market glut, as was the case with copper.

(*e*) *State of credits.* Whether excessive stocks operate to depress price depends largely on whether they are placed on

sale. With the three commodities, the market was, by and large, a buyer's market, except for premium grades of wheat, from the month of beginning progressive decline of price. The reactions of the sellers were in part determined by financial position. In the case of copper, the huge stocks accumulated in 1920 were not thrown on the market. They were pooled and funded through an issue of gold notes that were sold on the investment market. In all probability, the unfunded copper in 1920 and 1921, after the completion of this financial operation, was no higher than the figure for stocks in 1919. Bank pressure tending to force liquidative sale of copper was relieved by the funding operation. In the case of corn, no such transaction was possible. The corn remained in the hands of the grower, except to the extent that he shipped it out at the price of the day. During 1920 and 1921, the slightest indication of increased movement of corn from the farm tended to depress the price in the trading centers. In the case of wheat, this was less prominent. In the fall of 1921, wheat began to rise from a little over a dollar and reached a figure about $1.40 early in this year, to decline again at the close of May to $1.17. This cannot be explained on the basis of marketed wheat stocks. Curiously enough, as much wheat did not come out at the peak of this price as came out later during the decline.

The specific question concerning wheat and corn is this: Were farmers compelled to market grain in order to pay off loans? How largely were credits frozen in wheat and corn? To what extent was liquidation forced and the grains thrown on the market as an expression of banking pressure rather than as the result of desire of the grower to sell? Direct evidence on this subject is difficult to secure. In the case of corn, there is evidence, in the experiences of the War Finance Corporation, that holders of live stock had outstanding notes called and were refused new credits for feeding operations that would have resulted in increased consumption of corn. To what extent this led to forced sale of corn by farmers or merely impounded the stocks on the farm, is not clear. It seems probable that some corn was forced on the market through withdrawal of credit. In the case of wheat, the evidence is also positive. Instances are known, especially in the Pacific northwest, in which banks forced wheat growers to

sell their grain. But there is little evidence to suggest that this explained the overmarketing of the crop of 1921. There was holding back of wheat of the crop of 1920. There was overmarketing of the crop of 1921. The farmers who held back wheat of the crop of 1920 paid dearly for the experience; after the crop of 1921, the natural reaction was to take the opposite course and market early instead of late. The failure of the United States Grain Growers, Incorporated, to get under way for the crop of 1921 possibly accelerated the marketing of that crop.

The transactions of the War Finance Corporation afford many instances in which the direct or indirect aid of the corporation saved agriculturists from bankruptcy and kept their holdings off the auction block. This is a qualitative fact. The quantitative question, the amount of forced liquidation contrasted with the volume of ordinary sales, is naturally very difficult of determination. In the report of the Joint Commission of Agricultural Inquiry two pertinent facts are stated. (*a*) The liquidation of bank loans and discounts in the agricultural sections of the country were less than in the industrial sections during the period of decline of prices. (*b*) Bank deposits in the agricultural sections of the country declined more than in the industrial sections. The fact that liquidation in the industrial sections relatively exceeded that in the agricultural sections does of course not prove that banks in the agricultural sections did not call farmers' loans and compel them to sell products at spot prices. Reduction in deposits in agricultural sections are interpreted to indicate liquidation of obligations to country banks. With respect to the greater liquidation of loans and discounts in industrial sections as contrasted with agricultural sections, it seems probable that expansion and over-extension were greater in agriculture than in urban industries; and it seems certain that the power of liquidation, as evidenced by the writing down of inventories, was greater with manufacturers than with farmers. Finally, it must be recalled that of over twenty-eight thousand banks in the United States less than ten thousand are members of the Federal Reserve System. It is in particular the country banks with which the farmers deal that operate outside the Federal Reserve System. Such banks had it in their power to enforce liquidation of farmers' obligations, without the results

appearing in tangible form in the banking records that were at the disposal of the Joint Commission of Agricultural Inquiry. On the other hand, it is a matter of common knowledge the country over that banks did not foreclose, because foreclosure would have represented greater embarrassment to them than mere non-payment. And banks commonly refrained from forcing farmers to sell products because the returns would not have covered the obligations designed to be liquidated.

Contrasting copper with corn and wheat, it is clear that producers of copper possessed to the maximum the available facilities to protect themselves from glut by funding the excess stocks. The growers of wheat and corn possessed no corresponding facilities. While forced liquidation occurred to some extent, growers were for the most part permitted to carry on and hold or market at their own option. But the grower remained in a vulnerable position, since he was every day trying to decide whether higher price was in prospect, while the producers of copper were in a protected situation, since they were in position calmly to await the rise of copper that was certain to occur with revival of manufacture. They had to wait for a year but the increase finally arrived.

In the February number of the Quarterly Journal of Economics, 1921, appeared an unusually suggestive essay by Taussig entitled, "Is Price Determinate?" In this article he called particular attention to a zone of price fluctuations, which he termed the "penumbra," in which considerations of supply and demand do not directly apply. A scrutiny of conditions in the copper market and on the grain exchanges during the past two years suggests that in the case of corn and wheat the fluctuations within the penumbra have tended to produce effects downward, while no such situation has been present in the market of copper. In other words, the trading of the "bears" has been more effective with the grains than with copper. If this inference be correct, the fall in price of copper becomes still more striking.

If the four wheat-exporting nations could have held together for price control, the decline in price of wheat might have been moderated. James Stewart, Chairman of the Canadian war wheat board, testifying before the Committee on Agriculture of the Canadian House of Commons, expressed the

conviction that a wheat board in Canada alone would have been able to control the slump in price. But higher wheat prices for Europe might have driven Europe back to wheat substitutes.

Let us now summarize the comparisons between copper and the two grains.

(*a*) With all, increase in export demand.

(*b*) With all, decline in domestic demand, most pronounced in the case of copper.

(*c*) With copper, heavy accumulation of stocks; with corn moderate accumulation; with wheat decrease in stocks.

(*d*) Curtailment in production rigorously executed in the case of copper, absent in the case of the grains.

(*e*) State of credit an avoidable cause of embarrassment to producers of copper, an unavoidable cause of embarrassment, impending where not actual, to growers of grains.

From the standpoint of strategy and tactics, the position of copper producers was much superior to the position of grain growers. And yet, despite the advantages possessed by the copper producers compared with growers of grain, the price of copper declined more than the price of wheat and as much as corn. At no time did the price of cash wheat fall to the pre-war level. The cash price of corn and copper fell below the pre-war level. It is corn and copper that offer the most effective contrast. Copper possessed every available method of defence against price decline, and every known procedure was employed to retard and stabilize price decline. The growers of corn possessed no measures of defence against price decline. But the actual price decline was practically identical with both materials.

Such a survey makes one hesitate to interpret the relative, or over-relative, decline in the price of agricultural commodities in accordance with the explanations commonly offered. Too much prominence has been given to special circumstances and too little attention devoted to the general situation. In the published report of the National Agricultural Conference is to be found on page seventy the synopsis of an address by Wesley C. Mitchell, that was obviously characterized by particular restraint. I wish to lift two sentences out of the context: "Let me begin with an Irish bull: the fundamental reason why prices fell so far in 1920 and 1921 was that they

had risen so far in 1915-1919." "The war-time rise in the purchasing power of commodities over gold and the post-war fall in this purchasing power are world phenomena, not American phenomena. They are due to world causes, not to American causes." In the second section of the Manchester Guardian Comercial (May, 1922) J. M. Keynes, discussing the business debâcle of 1921, says: "Popular opinion attributes, in my opinion, too much to the war and too little to the results of the cyclical fluctuation of trade, as economists call it, which we have just experienced, on an unprecedented scale indeed, but of a type which was regular and familiar even before the war." In a memorandum on the world's monetary problems, written by Gustav Cassel, on invitation of the League of Nations and read at the International Finance Conference in Brussels, the chapter in reconstruction is introduced with the following words: "It is often contended, and still more often thoughtlessly repeated, that the present miserable situation of Europe is the result of the war. This is not true." We, too, frequently seek in our direct environment the causes of effects that are immediately sensible to us, just as animals seek in their immediate surroundings the origin of physical injury. A longer, as well as a larger, view is necessary. When we have defined the causes of the decline in price of copper, it is probable that we shall have defined to a large extent the causes for the decline in the prices of wheat and corn, without any appeal to the special explanations that have been commonly employed in discussions on declines of prices of farmers' goods.

The question of the low purchasing power of farmers' raw products in terms of finished goods of urban manufacture is a different problem. The purchasing power of copper for shoes, hats, furniture, phonographs and railway transportation was as low as that of corn. The purchasing power of copper for electrical motors was as low as the purchasing power of corn for corn starch. Unfortunate confusion has been introduced into the situation by the failure to separate fall in price of raw material from decline in the purchasing power of raw material for finished goods.

NOTES ON FARM ACCOUNTING IN SOME EUROPEAN COUNTRIES

G. F. WARREN

It has been said that war ends by the exhaustion of agriculture. Our own formula for it was: "Food will win the war." Probably the lack of it was the weakest point in all of the warring countries. Nothing is more depressing to patriotism than an empty stomach. The soldiers may have food, but if the people at home lack food, there is trouble. When sudden economic changes occur the consumer is unwilling to wait for supply and demand to find an equilibrium. He calls for the price-fixer with his magic two-edged sword—one edge of which slashes the price to suit the consumer while the other slashes production to suit nobody. In the backward countries agriculture declined peacefully as it should in a well-regulated monarchy. In the countries where the farmers were better educated and more up-standing they resisted the city-made policies that would give cheap food today and nothing tomorrow. By vigorously opposing the apparent patriotic movements of the Government, farmers kept agriculture alive. By serving their selfish interests they proved to be the best servants of public welfare. How could they meet the attacks of the price-fixers? One means was by cost accounting. Hence in the United States and in the progressive countries of Europe a great stimulus was given to cost accounting. There are better measures for comparing the status of city and country than cost accounting, but with the general ignorance of economic and agricultural questions cost accounts seem to be the most generally accepted measure. The rate of movement of workers from farms to factories and from factories to farms, index numbers of agricultural prices compared with other prices, increase or decrease in efforts at food production such as the raising of heifers are often more significant than cost of production.

Another factor in the development of cost accounting in Europe has been the question of taxation. The results of accounts are used to indicate the status of agriculture, as well as to protect the individual.

The primary service that cost accounts can render is in business analysis of agricultural production, not in making comparisons of agriculture with cities in order to see who is getting more than his share of the good things of life. Cost accounts furnish a basis for studying ways of reducing costs and for finding ways of increasing profits. Whatever the motive for starting cost accounts the large amount of data gathered will be of great service in making analyses of agricultural production.

Accounting work in England is being done by the Institute for Research in Agricultural Economics, Oxford University. The workers in this are C. S. Orwin and Arthur W. Ashby. They keep accounts on a limited number of farms and are doing much other work in farm management and agricultural economics.

As usual in agricultural matters, Denmark is one of the leaders. A Bureau of Agricultural Economics was established at Copenhagen. It is in charge of Professor O. H. Larsen who is also Professor of Agricultural Economics in the Agricultural College. The method of doing the work is similar to that used for cow testing associations. A group of farmers employ a farm accountant (often one of Professor Larsen's students) to go from farm to farm and keep the accounts. The Government pays one-half of his salary and the farmers pay one-half. He uses a bicycle to go from farm to farm. In the very open climate of Denmark and with small average size of farms, this works very well. The farms with which accounts were kept averaged 104.7 acres. The first year when the farmers are not used to the work one man keeps accounts with about twenty farms, later the number may grow to thirty. Each of these farm societies is independent. They may or may not cooperate with the Bureau of Agricultural Economics. Some of them complete and publish their own results. One very able man has been so successful that his association includes 150 farms and he has five assistants working with him. In 1921, there were about forty such associations and about sixty accountants in the field keeping accounts on about fifteen hundred farms. Many of the accounts come to the Bureau of Agricultural Economics for summarizing. Those that are sufficiently complete and accurate are summarized and published. The results for 305 farms have been published.

Forty-six accounts were kept for three successive years. In 1920 and 1921, the central office tabulated the accounts for 466 farms.[1]

The central office employs four men and one woman. The system of accounts used is much the same as the common system used in America—cashbooks, labor books, feed books, ledgers are kept. The labor cost is distributed according to the hours of labor on the enterprise except some special labor like potato picking which may be charged directly to the account. Fertilizer is usually distributed according to the fertilizer removed by the crop. The troubles with unstable money are familiar to us. Inflation was worse in Denmark than in the United States, therefore, the problems were more serious. In the published reports live stock was inventoried at five-year average prices. In many calculations inventories were made on the basis of previous prices, and separate calculations made on the basis of current prices.

They have the same difficulties that are experienced in the United States. The farms on which accounts are kept are much better than the average so that if a complete picture is desired of the agricultural industry, cost accounting does not give it. The method of using agricultural surveys for the major studies with cost accounts as a supplement and check has not been much used in Europe. It would probably be successful in the more advanced countries.

The depression in the animal industry in 1918 was even more serious than in the United States. The milk production per cow in 1918-19 was only sixty-one per cent of the production for the previous year owing to difficulty in getting feed. The milk production per cow in 1916-17 was 7300 pounds. On farms on which cost accounts were kept in New York State it averaged 6290 pounds. Judging by data on farms which I visited this was before the shortage of feeds had checked production seriously. Two years later

---

[1]Larsen, O. H. and Dokken, Ivar, "Undersogelser over Landbrugets Driftsforhold IV. Regnskabsresultater fra danske Landbrug i Aaret 1919-20" Det landokonomiske Driftsbureau. Kobenhavn, 1921.

———————, "Forelobig Oversigt over Landbrugets Driftresultat i Regnskabsaaret 1920-21." Meddelelser fra Det landokonomiske Driftsbureau. 1 Meddelelse. 10. Aug. 1922.

it dropped to 4520 pounds per cow. This is one of the many indications of how dependent Danish agriculture is on the Americas. To a considerable extent Danish agriculture is the process of mixing some Danish crops with American feeds. The average hours work per horse was 1255 to 1355 in different years. In New York it averaged 990 for five years.

The social distribution of farm incomes was given as follows: hired labor 25 per cent; family labor and management 21 per cent; taxes 4 per cent; balance to cover interest paid, interest earned on owned capital, and profits 43 per cent.

During the period of high prices, intensive farm operations paid best just as they did in all other countries. This is because farm wages lagged behind prices. Denmark did not begin to deflate until nearly a year later than the United States. With the fall in prices intensive operations will be less profitable although wages in Denmark may follow prices more closely than in America because they have fewer cities. When farm prices drop, farm labor does not resist wage adjustments as does city labor.

Czecho-Slovakia apparently stands next to Denmark in farm management work. Dr. Vlad Brdlik is Professor of Economics in the University of Prague, and Director of the Agricultural Institute for Bookkeeping and Farm Management. This is much like the Division of Farm Management in the Department of Agriculture. It receives part of its support from the government and part from the farmers. The following statement is taken from Mr. Callander's notes:

"In farm management and cost of production studies Czecho-Slovakia probably stands next to Denmark in Europe in the advancement made in a scientific study of those matters. This work has been going on for ten years in the provinces of Bohemia and Moravia, and is now being actively extended to Slovakia and Subcarpathian Russia and Silesia. Over 500 farmers in Bohemia and Moravia have been keeping detailed cost records for a period of ten years. The farmers whose records are being kept contribute a portion of the expense, the amount of which is based on the number of hectares in the farms. The small farmers contribute but little, while the larger land holders meet a large percentage of the expense of handling their accounts. In one

case four large farms contribute sufficient to pay the salary and expenses of one official in the institute. When the work was first started it was done gratis for the farmer and as a result there was a turn-over, i. e., a dropping out, of about 50 per cent yearly in number of farms for whom accounts were kept. Now that the farmers are paying for the work, they are taking a keener interest in it and the turn-over is about 20 per cent a year. Those farmers who have continued to send in reports for ten years will be rewarded in some satisfactory manner, probably by a handsome diploma, or in a more substantial way, such as a new agricultural implement.

"Each of the farmers sends in a weekly report of sales and purchases, hours of work performed, etc. These weekly reports are recorded on large blanks at the institute and from these are carefully summarized. At the end of the year, each farmer receives from the institute a detailed summary for his farm showing the results of his year's work and the net profit or loss on his farm. At the same time he is furnished with a statement of the average profits per hectare, per man, etc., for his district in order that he may compare his own efficiency with that of other farmers in the district and thus stimulate him to greater effort.

"These detailed records are kept by double entry bookkeeping. In addition to these the institute has a much simpler system of accounting for farmers who do not wish to undertake the more detailed plan. Usually the farmer starts off by using the simpler plan. When work is started in a district usually an expert visits it and furnishes information and instruction for handling the work. Frequently the farmers who have been keeping accounts for some time act as instructors for the beginners.

"Recently two sets of questionnaires covering a period of five years were sent out, one, rather simple in form, going to the peasants and small farmers and the other to the large estates. Fifteen hundred returns were secured from Bohemia, 600 from Moravia, and 400 from Slovakia. In the eastern provinces of Slovakia and Subcarpathian Russia schools for adults for the purpose of instructing them in the keeping of accounts are conducted from time to time.

"The institute has branch offices at Bruno, Bratislava and Uzhorod. The most efficacious argument for persuading the

farmers to keep books is that when they have these records they will be in a position to prevent the unjust imposition of income taxes.

"From the studies made of the hundreds of accounts the institute publishes reports from time to time showing the cost of production of various crops and numerous other data. The statistical information obtained from the records is kept in a variety of ways, thus affording a rich storehouse for the study of many of the problems affecting agriculture." [2]

As in the United States, much of the European work gives too much attention to money units and too little attention to the more stable and usually more significant facts such as hours of labor, pounds, and the like. Money units mean little except at the moment. They do not provide for analysis. Hours and pounds are fixed quantities and are significant for all times and furnish means of analysis of the causes of profits or losses. In general, as in America, there is a tendency to give too much weight to the costs and too little to business analysis.

Thus far the amount of statistical help has not been great enough to allow for the best development of the research phases of the work, but with the large number of accounts in the hands of the central agencies we may look for important research work dealing with the organization of agriculture in Europe.

---

[2]Translation of the forms used in Czecho-Slovakia are available in the Bureau of Agricultural Economics, Washington, D. C.

THE CROP REPORTING SYSTEMS OF EUROPE

W. F. CALLANDER

Crop reporting, as that term is now understood, is of comparatively recent origin in Europe. Most of the systems and methods now in use have been introduced during the last 50 years. Some of them have been in operation but a few years.

The gathering of agricultural statistics through census enumerations, however, is of much earlier origin, dating back in some of the European countries to the middle ages. During the reign of Charlemagne, it is recorded that he ordered an agricultural census to be taken throughout his kingdom. In Spain there is a record of an agricultural census taken about the middle of the 18th century.

No European country, however, had succeeded in establishing a comprehensive crop reporting system in which crop conditions were expressed in mathematical terms until some time after the system now used in the United States had been in successful operation. During the Civil War reports were made for the northern States; at its close the system was extended to cover all States. In England, France, and Norway, some attempts had been made at an earlier date to make reports, mostly of a descriptive nature, concerning crop conditions, and in Prussia as early as 1852 some reports are to be found in which the yield of crops was reported on a percentage basis with 100 as a standard, representing an "imaginary normal crop," but apparently no effort was made to estimate in actual units of measure per unit of area.

In recent years the science of crop reporting has developed rapidly throughout the world until today practically all of the civilized countries are gathering and publishing crop reports in some form or other. Progress has been especially rapid since the organization of the International Institute of Agriculture at Rome, to which most of the civilized nations now adhere and make reports.

The statistical organization and methods used in the various European countries for gathering crop and live stock statistics

and making crop reports vary widely. To present a complete picture of the crop reporting systems used throughout Europe, it would be necessary to give a separate description of the methods in vogue in each country. This would require a large volume. Even in the British Isles differences exist in the methods used in England and Scotland and Ireland, particularly in Ireland. The writer will, therefore, after a general discussion, give the details of two or three countries in which the crop reporting systems have reached a high degree of perfection but which are quite different in their character.

Organization for Work

In many countries the Department of Agriculture is responsible for all of the agricultural statistical work. This is true in England, Ireland, Scotland, France, Belgium, Holland, Hungary, and probably in several other countries. There has been a tendency in Europe, however, to centralize all the statistical work of the Government under one statistical bureau and we find central bureaus of statistics in Norway, Sweden, Denmark, Germany, Poland and Czecho-Slovakia, which are concerned with agricultural statistics as well as other kinds. Even where this centralization has occurred the gathering of condition reports during the growing season is usually left to the Department of Agriculture. Norway and Czecho-Slovakia may be cited as examples of where the central statistical bureau gathers information as to acreage, numbers of live stock, and publishes final production figures, while the Department of Agriculture gathers and publishes monthly crop condition reports.

Sources of Information

One familiar with the American system of securing reports from a number of independent sources with a view to using them as checks upon each other is struck with the lack of such checks in most of the European systems of crop reporting and the possible danger of error in the results.

The number of correspondents making reports of condition is rather limited in most countries. In England these number about 350, in Norway about 50 and in Denmark about 100. In Ireland there is about one reporter to each county; in all of

Sweden there are apparently about 100 reporters; in Germany about 7,000, in Poland about 3,000, in Czecho-Slovakia 1,400, etc.

In the United States a great deal more of the statistical compilation work is done in the central office than in most European countries. As a general rule the reports undergo a process of condensation before they are finally forwarded to the central office. In France, for instance, the system is such that the central office receives but one report from each Department, instead of thousands of reports from the smaller units, within the Departments. A Department corresponds in some respects to one of our States. The administrative units in France consist, in ascending order of size, of communes, cantons, arrondissements and departments. Certain officials in each commune gather and compile the statistics for that commune. These statistics, or reports, are forwarded to the officials in charge of the work in the canton. The canton summaries are in turn forwarded to the central office of the arrondissement. The arrondissements within a Department in turn send their summaries to the Department. Each Department forwards a summarized report to the Central Bureau at Paris. This cumulative plan greatly simplifies the work for the central office but apparently makes it difficult to check the returns for the smaller subdivisions.

Character of Reporters

One of the interesting facts noted in many countries is the use which is made of agricultural teachers and instructors, agricultural inspectors, and local administrative officials, such as sheriffs, notaries, mayors, burgomasters, etc., for the gathering and furnishing of agricultural statistics and reports. The work of gathering agricultural statistics and making reports is frequently made a part of the regular duties of these local administrative officials. Because of the control which the central government exerts in most countries over local affairs it is possible to compel such local officials to make reports at the time and in the way desired by the central organization. In but a few countries are the reporters paid especially for their work, the exceptions being England and Hungary.

In the United States comparatively little use is being made of agricultural teachers, county agents, and other governmental or semi-governmental officials or representatives, as crop correspondents. This may be due to the fact that the rank and file of the farmers of this country possess such a high degree of intelligence that it is possible for the Department to obtain its information direct from the farmers themselves without the aid of local, agricultural or other government agents. Furthermore, the regular duties of such persons are usually sufficient to keep them fully employed.

Methods Used for Reporting Crop Condition

There are three rather well-defined methods used in Europe for expressing the condition of crops during the growing season. These may be termed the percentage method, with 100 representing a normal or average; the numerical symbol method, using figures ranging from 1 to 6 or 6 to 1; and the descriptive method, where adjectives instead of numbers are used.

In England, Scotland, and Norway the percentage method is used, 100 representing a 10-year average yield. In France numbers are used corresponding to percentages, 100 representing excellent, 80 good, 60 not so good, 50 fair, 30 poor, and 20 failure. In Holland, a similar system exists to that in France, 100 representing excellent, 90 very good, 70 good, 60 fairly good, 50 normal, 40 below normal, 30 poor, 10 very poor, and 0 failure. In Ireland, Spain, Italy, Switzerland, Roumania, and Belgium the descriptive method is used; that is, adjectives instead of figures are used to express condition, the words commonly used being, excellent, very good, good, average or normal, fair, poor, failure, etc. In Germany, Hungary, Poland, Czecho-Slovakia, and Austria, the condition of growing crops is expressed in figures ranging from 1 to 5, and in some cases to 6, 1 representing excellent, or very good, 2 good, 3 normal or average, 4 not so good, and 5 failure. In Denmark, Sweden, and Bulgaria, similar numbers are used, but they are reversed, 6 or 5 representing an excellent crop, and 1 a poor crop with 0 representing failure. In those countries where the numerical symbols are used, 3 or 4 or 3.5 is usually considered the average or normal figure. In Finland,

the numbers range from 8 to 1, 8 meaning abundant, 7 good, 6 above average, 5 average, 4 less than average, 3 very poor, 2 practically failure, 1 failure. In Switzerland, the correspondents report condition in adjectives ranging from "very good" to "very poor," which are converted into numbers in the central office before publication.

All countries which report to the International Institute at Rome are requested to "report the condition of growing crops in the form of a percentage, 100 representing an average condition, which if uninfluenced by abnormal circumstances would give a probable yield per unit of surface equal to the average yield of the past 10 years," but for local publication the results are usually published in the form in which they are gathered, and not on the basis outlined by the institute.

Use of the Word "Normal"

In no country in Europe is the word "normal" used in crop reporting in the same sense as in the United States, although the word itself is used by several countries. In the United States "normal" represented by 100 per cent has been used for years as the basis for reporting the condition of growing crops. In the instructions to reporters in the United States for reporting on the condition of crops, the following is found:

> "The condition of the crops asked for is not in comparison with a condition at any former period, but with a 'normal' condition of growth and vitality such as would be expected at this time in a crop starting out under favorable conditions and not subjected afterwards to unfavorable weather, insect pests, or other injurious agencies. In estimating condition of crops in comparison with a normal condition of growth and vitality giving promise of a full yield per acre, 100 is the basis."

While this definition of normal is rather special or technical, it is clearly understood by reporters and has proved itself to be an extremely satisfactory basis for reporting.

In England, the word when used has reference to an average crop and reporters in reporting upon condition are instructed to state the probable yield per acre as a percentage of the average yield in the same district, their reports being in the form of a percentage above or below the average yield for a period of ten years which is represented by 100.

In Norway, which has recently changed to a percentage basis from a numerical symbol basis, the word "normal" is

used in much the same sense as in England, and is defined "to be the average quantity or quality of crops for a series of years." In discussing the basis for reporting condition, the following comment is found in a recent statistical report of the Norwegian Statistical Bureau:

> "When a farmer gives the figures of the normal yield for a series of years, he is likely not to take years of crop failures into consideration. What he calls normal crops is what he expects his farm will yield. He does not calculate the average of each year's crop, but remembers the best and the most general crops. He does not take into consideration the years when the crop failed, and he is likely to see the general crop in too high figures. As a consequence his estimate, expressed in percentage of the expected normal yield, is placed too low. The estimates give the best results for the kinds of crops which are least subject to great variations."

That such estimates are too low may be illustrated by the following hypothetical example. Suppose the actual average yields for five years for wheat were as follows: First year, 35; second year, 10; third year, 25; fourth year, 30; fifth year, 40. This would give an actual average yield for the five years of 28 bushels. In reporting, however, the farmer is not likely to remember the small yield of 10 bushels, and will average in his mind the better years, which might give him an average yield let us say of 32 bushels. Suppose the average yield for the year for which he is reporting is actually 32 bushels. He will report 100. The average for the last five years is actually 28 bushels, so instead of reporting 100 he should have reported 116, if he had had the true average in mind. This is one of the weaknesses of using an average rather than a "normal" as used in the United States in reporting a condition and makes it necessary to allow for a greater bias in reports. The Canadian Bureau of Statistics has apparently experienced this difficulty during the current year.

Methods of Estimating Acreage

The methods used for reporting acreage in crops vary quite as widely as the methods used for reporting condition. In England, a careful annual census is taken in June by paid reporters. This is also true in Scotland and up to 1919 an annual census was taken in Ireland by the state constabulary

force. Since 1919, because of the unsettled condition of the country, the acreage has had to be estimated. These estimates have been based on a large number of returns from individual farms. The results have been satisfactory to date. The method used is very similar to the individual farm survey method used in the United States, except that a larger number of samples were used. The method is very effective where the total acreage does not vary materially from year to year.

A census is taken annually in Denmark of acreage and numbers of live stock, also in Hungary, and to all intents and purposes, in France. In France, however, preliminary estimates are made and the final results of the census are not available until a considerable time after the crops reported on have been harvested.

In Norway, prior to 1922, no attempt had been made to estimate the yearly changes in acreage, the acreage as reported in their decennial census being used as a basis for estimating production in the inter-census years. This was likely to give rise to serious error. Steps were taken in 1921 to develop a plan for making yearly estimates of changes. In Sweden, prior to the war, no effort was made to estimate yearly changes in acreage, but during the war an annual census was taken and a plan has now been developed whereby one-eighth of the country will be surveyed each year and the returns used for correcting the yearly acreage figures. This is in reality in the nature of a sample census.

The methods used in Germany for estimating acreage are two in number. One is known as the individualistic method in which schedules are sent to individual farmers to be filled out. The other method provides for reports being sent in by commissioners appointed for each distinct community. It is left to the decision of the various provinces as to which method shall be used. It has been found, however, that the individualistic method is apt to give returns too low.

In countries like Hungary where the farmers live in villages and there is a corps of paid crop correspondents, it is relatively simple to make an annual census of acreage.

QUANTITATIVE ESTIMATES

Comparatively few European countries have made any attempt up to this time to convert condition reports into quantitative forecasts of probable production during the growing season. In England, Ireland, Scotland, Norway, Denmark, Spain, Finland, France, Italy, Poland, Portugal, Roumania, Switzerland, Austria, and Czecho Slovakia, no attempt was made to make such conversions prior to this year. In 1922, however, the reports of the International Institute indicate that England and Finland have started to make preharvest forecasts. In Sweden a forecast of grain production is made one month prior to harvest and in Germany similar forecasts have been made just prior to harvest. Poland has also made some preliminary estimates. In Hungary, quantitative forecasts are made for grain beginning with July 1, and for potatoes, corn, and sugar beets beginning September 1. Instead of attempting to convert condition reports into their yield equivalents, however, the reporters are asked to make their estimates in terms of actual yields per unit of area. Belgium, Greece, Spain and Bulgaria also report quantitative figures to the International Institute of Agriculture prior to harvest.

While, as stated above, but few countries have attempted of their own accord to convert condition figures into forecasts of production expressed in a quantitative way, it would be a comparatively simple process in those countries which have records for a series of years of monthly reports of condition and final yields expressed in mathematical terms. The efforts of the International Institute of Agriculture to develop quantitative forecasting during the growing season will no doubt eventually bring this about.

The question is frequently asked in this country, as well as abroad, why does the United States Department of Agriculture not ask for estimates in actual yields per acre rather than condition figures, which must be converted by the central office into yields per acre? A number of experiments have been made to test out the two methods and it has been found that more accurate results are secured by having the reporters prior to harvest, make their estimates in percentage figures, rather than estimated average yields. The deviation in the

reports from the average is very much less when percentage figures are given than when estimated average yields per acre are given, and in the case of cabbage it has been found that even after harvest, yields can be more accurately determined from percentages than from actual yield estimates.

In several countries the statisticians are now studying the problem and have worked out the relationship between the monthly condition figures and the final yields as reported after harvest with a view to establishing pars similar to those used in the United States. This subject was discussed at the twelfth annual meeting of the Scandinavian Statistical Congress, an organization composed of representatives from the statistical bureaus of the Scandinavian countries, Finland, and Germany. In one of the papers presented at the meeting, a series of tables and charts were presented showing for a number of crops in Denmark and Sweden the monthly condition reports with final yields. One of the leading statisticians in Sweden has been studying the subject and has worked out the correlation between the monthly figures and the final yields. He has demonstrated the feasibility of making rather accurate forecasts prior to harvest.

Live Stock

The leading countries of Europe make annual reports of numbers of live stock on farms. In several countries this amounts to practically an annual census. This is true of England, Scotland, Denmark, Germany, Holland, Hungary, and France, and probably one or two others. Very few countries, if any, attempt to estimate the changes in numbers of live stock from year to year on a percentage basis similar to that used in the United States, while a number of countries are content with a decennial or other periodical census taken at longer intervals than a year. In Ireland, since 1919, annual estimates of numbers of live stock on farms have been based on a sampling method similar to that used in that country for determining acreage.

Publication of Crop Reports

Several of the European countries have an official daily gazette, as, for example, the Journal Officiel in France, in which crop reports are published immediately after they are

compiled. In other countries the reports are published in small bulletins, or are given to the press in form of mimeographed statements, and later published in greater detail in monthly or other periodical official bulletins or journals published by the Government. Annual yearbooks, similar to that issued in the United States, are published by several countries. The Economic Library of the Department of Agriculture at Washington receives practically all of such bulletins and periodicals published throughout the world.

Effect of the War on Statistics

During the late war the volume of statistics in practically every European country was greatly increased, due largely to the control of food prices and food supplies by the Government and the necessity of having accurate knowledge of the quantities of food available. Frequent surveys and investigations were made, not only of production, but of stocks on hand, and many expedients were used to stimulate production.

Since the war those engaged in statistical work have endeavored to incorporate in the regular statistical systems of their country some of the special methods and reports used during the war. These efforts have not been very successful, however, due to the necessity of keeping down governmental expenditures. The net result of the war, therefore, has been unfavorable rather than favorable in its effect on the accuracy and scope of agricultural statistics in Europe. The great changes which have occurred in the boundary lines of many countries, the present shortage of funds for doing statistical work, and the general feeling of unrest are all affecting the situation. In some of the smaller countries there is a tendency to regard agricultural statistics as a luxury, consequently, the funds for statistical work are left at a minimum.

The Crop Reporting System of England and Wales

The work of gathering and publishing crop and live stock reports in England and Wales is carried on by a branch of the Ministry of Agriculture and Fisheries. A corps of 350 paid crop reporters is maintained who take an annual census of the acreages and number of live stock as of June 1 in each year. They also make monthly reports on crop conditions and yields running throughout the year. These reporters are selected

and paid by the Ministry of Agriculture and Fisheries. They are not usually farmers themselves but are what are known as "land valuers." The census is taken by mailing out to each landholder blanks to be filled out and returned to the reporter. Those who fail to return the blanks are visited personally. During the war the filling out of the blanks was made compulsory. Beginning in January each year, and running throughout the year, monthly blanks are sent out to the reporters which ask for considerable information, including condition of crops, live stock, supply of labor, progress of planting and sowing, etc. The reporters are instructed to report the condition of crops during the growing season as a percentage above or below the ten-year average yield which is represented by 100.

The January 1 schedule, which illustrates the character of the monthly crop schedule, includes the following questions: (1) Progress of autumn cultivation and sowing—*a*, wheat; *b*, oats; *c*, beans. (2) Present appearance of autumn-sown crops—*a*, wheat; *b*, oats; *c*, beans. (3) Approximate area sown with each crop to date, as compared with the area sown at the same date last year—*a*, wheat; *b*, oats; *c*, beans. (4) Are potatoes keeping well or not? (5) General quality and condition of turnips and swedes when lifted. (6) Condition of "seeds" as regards plant vigor and healthiness. (7) Condition of ewes and of stock generally and general outlook as regards winter keep. (8) Are calves being reared to a greater or less extent than last year? (9) Supply of labor. (10) Weather during December and effect on autumn cultivation and sowing, germination and growth of autumn-sown crops, lifting of turnips and swedes, and live stock.

The questionnaire sent out on September 1 contains the following: (1) Approximate date of commencement of harvest—*a*, wheat; *b*, barley; *c*, oats. (2) Progress of harvest and quality of grain. (State roughly what proportions of the crops have been harvested, and the conditions affecting harvest. Also report on the quality and condition of the grain.) —*a*, wheat; *b*, barley; *c*, oats; *d*, beans; *e*, peas. (3) Present condition of crops as regards plant vigor and healthiness. Mention any unusual prevalence of disease or insects affecting particular crops and whether potatoes are sprouting, etc.— *a*, potatoes; *b*, turnips and swedes; *c*, mangolds. (4) Probable

yield as compared with an average crop—*a*, wheat; *b*, peas; *c*, barley; *d*, potatoes; *e*, oats; *f*, turnips and swedes; *g*, beans; *h*, mangolds. (5) Progress of cultivation. (6) Condition of seeds. (7) What steps are being taken to grow winter keep to make good the expected shortage of roots? (8) Condition of pastures and aftermath. (9) Progress of cattle and sheep. (10) Supply of labor. (11) Weather during August and effect on agriculture generally.

In October, reporters send in estimates of the average yield of wheat, barley, oats, beans, peas, hay and hops, and in November estimates of the yield of potatoes and root crops. These yields are multiplied by the acreage in the various districts as reported earlier and total production figures arrived at. (No attempt was made to forecast production before harvest prior to 1922.)

In addition to the information published monthly concerning crop and live stock production, a corps of market reporters is maintained and reports are received for 160 cities on live stock prices. The prices on other agricultural products are reported from eight centers. During the war there was a law which required the purchasers of domestic grain to report the amount of prices paid. From these reports a weighted average from each section was worked up in a report for the country as a whole.

Estimates are made by the reporters each year of the stocks of grain and hay in farmers' hands. These reports were started during the war for military purposes and are being continued. They are not published, however, being regarded as confidential.

Schedules used by the reporters in gathering acreages and numbers of live stock are furnished by the Ministry, one for each holding. These numbered in 1919 about 417,000. The tabulation of the returns is done in the central office in London, and the results are published in Agricultural Gazette, an official journal of the Government.

The Crop Reporting System of Hungary

Hungary has probably the most complete crop reporting system in Europe. For years, the Hungarian Government has taken great pride in its statistical publications.

Although there is a central statistical bureau, the actual handling of the gathering and compiling of crop statistics

and the issuance of reports are under the direction of the Minister of Agriculture. The statistical work of the office is divided into several branches, one of which has direct charge of the gathering and publishing of agricultural production statistics. Another division is concerned with the gathering and publishing of statistics concerning imports, exports, wages, etc.

A complete crop reporting calendar is published at the beginning of each year. This calendar shows first, the number of the report, the reports being numbered consecutively beginning with the first one made in January; second, the date on the morning of which it must be mailed by the local reporter to the district reporter; third, the color of the blank to use; fourth, the form number of the printed blank; fifth, the principal subject of the report; sixth, the date the district reporter must report to Budapest; and seventh, date and hour of publication at Budapest. The dates on which the districts reporters are required to send telegraphic information are also shown.

This calendar for crop reporters is contained in a book in which the crop blanks for a year are bound. On each crop reporting date the local crop reporter detaches the blank for that particular date, fills it out, and sends it to the district reporter called Agricultural Inspector, of which there are 168, one for each district. The district reporter combines the reports for his district for a report to the central office at Budapest. The district reporters are also supplied with telegraphic blanks for reporting unusual occurrences or conditions which materially affect the crops.

In addition to this book of blanks, each reporter prior to the war was furnished with a handbook of agriculture corresponding somewhat in size to our annual Yearbook, but quite different in contents. This handbook contained a set of tables and weights and measures, a calendar of important dates and events, facsimile copies of the crop reporting blanks for a year, and a description of the crop reporting system. It also contained a great deal of material relating to plant and animal diseases and insect pests, together with methods for their eradication and control. It was in fact, a very valuable book and if it were possible to prepare such a book for crop reporters in the United States, it would be very desirable.

The system of estimating condition of growing crops used in Hungary is similar to that of Germany, in that 1 represents the best condition and 5 the poorest. These numbers are used until June for grain and until September for potatoes, corn and sugar beets. On July 1 a quantitative estimate in quintals is made of grain crops and in September of corn, potatoes and sugar beets, and each month thereafter until the completion of the harvest.

Each county is divided into districts for crop reporting purposes. Each district has an agricultural inspector or reporter who is a paid employee and sends in the crop reports for his district. These crop reports for the district are based upon reports received from local reporters in each little community. The local reporter is frequently the principal of a school or a leading farmer. The inspector summarizes these various reports and sends them to Budapest where they are published on dates set a year in advance. They appear first in mimeograph form and at the end of the year a printed annual report is published. Because of shortage of funds the statistical publications of the Hungarian Government have been greatly reduced.

The fact that nearly all of the farmers of Hungary live in small villages makes the work of the crop reporter relatively easy. He is able to see practically all of the farmers daily by visiting the Town Hall or other places where the farmers gather to talk matters over. Because of the village organization of farming, it is possible for the reporters to make, without much expense, an annual census of acreage. This is also true of live stock, but in the case of live stock it is the notary public or veterinarian of the village who sends in the reports. Prior to the war an annual census of live stock was taken in March of each year, but this plan has been somewhat interfered with since that time. In fact, according to recent advices several modifications of the system outlined above have had to be made in connection with the 1922 reports.

No reports are made in Hungary at the present time on farm prices. The prices of many commodities appear in the daily press however.

NOTE.—The blank forms used in most of the European countries as well as detailed descriptions of methods used are on file in the Bureau of Agricultural Economics.

EXPANSION OF LIVE STOCK REPORTING BY THE BUREAU OF AGRICULTURAL ECONOMICS

W. F. CALLANDER

There has been a growing demand in recent years on the part of live stock producers for more and better statistics concerning live stock production and live stock movements. To meet this demand steps have recently been taken by the Bureau of Agricultural Economics to greatly enlarge the work of live stock reporting.

The live stock statistical work, as carried on by the former Bureau of Crop Estimates, has been confined to (1) an annual estimate on January 1 of each year of the number of horses, mules, milk cows, other cattle, sheep, and swine, on farms, with average values per head; (2) an annual estimate of the number of brood sows on farms ascertained on a percentage basis and interpreted numerically; (3) an annual estimate of mortality of different species of live stock from various causes; (4) a full estimate of the number of stock hogs on farms ascertained on a percentage basis and interpreted numerically; (5) a monthly report of farm prices of live stock.

In addition to these regular reports some experimental work has been carried on for several years with a view to determining the monthly changes in the number of live stock on farms, reports being secured monthly from about 10,000 farms. These reports show the number of cattle, sheep and swine on the farms reporting the first of the month, the number at the end of the month, and the births, deaths, sales, and purchases during the month. From these reports the net change from month to month occurring on these farms is determined. These reports, especially on hogs, have attracted considerable attention and have proven to be a fairly accurate index of the changes in numbers as indicated by receipts at stockyards.

The enlarged service will include the following:

(1) An enlargement of the scope of the present annual estimates of numbers of live stock on farms January 1 to show the age and sex of such animals.

(2) The making of a semi-annual pig survey through the rural mail carriers for the purpose of estimating the number of pigs born in the fall and spring months. The first survey of this kind was made in May of this year and covered 17 States. The next will be made in November and will cover the entire United States.

(3) Monthly reports of the changes in numbers of live stock on farms based on reports from a large number of sample farms. This will be an expansion of the experimental work already carried on. It is proposed to enlarge the list to fifty or sixty thousand farms in order to get a more stable figure.

(4) Preliminary and final estimates of the annual calf and lamb crops in the corn belt and western States.

(5) Periodical estimates of the available supplies of feeder cattle, sheep, and lambs in the range States, these estimates to be made about twice a year.

(6) Periodical estimates of the number of cattle and sheep on feed in the corn belt and elsewhere. The first of these reports will be made about December 1 and, if possible, periodically thereafter during the winter season.

(7) Monthly reports of the condition of pasture and reports on available supplies of feed particularly in the range States.

(8) Monthly reports of the actual movement of live stock as reported by railroads, public stockyards, live stock sanitary boards, and others, and based on these and other information periodical forecasts of probable future movements.

It has not been necessary to establish an entirely new organization for handling the live stock work. It is being taken care of by an increase in the statistical and clerical personnel of the existing field offices of the bureau already established in each State. An experienced statistician has been placed at Denver who will act as general supervisor of the work in the range States and a well-trained live stock specialist has been placed in Chicago to develop the work in the corn belt States.

Outside of the pig survey and the reports of the monthly changes on farms, lack of funds will prevent extension of work under the enlarged project to the eastern and southern States, with the possible exception of a special report of the spring lamb movement in Virginia, Tennessee, Kentucky and West Virginia.

Some work has already been done; one pig survey was made last May in 17 States and a special report was re-

cently made on the number of cattle on pasture in the Flint Hills of Kansas to which a large number of cattle are shipped in the spring from Texas for fattening on pasture. Last spring a report was made of the available supply of feeder cattle in Arizona and another report on July 1 of the available supply for fall delivery. A report was also made in Arizona recently of the available supply of lambs for fall delivery, and a special field survey of the supply of feeder cattle is now under way in the Sand Hills of Nebraska. The field men assigned to live stock work are now studying the principal live stock areas and movements in their respective States in order that the whole project may be coordinated and systematized. The compilation of back data of railroad movements is also well under way.

The work already done has created considerable interest and is receiving the enthusiastic support of the live stock producers associations of the west.

Comparatively little has been done as yet in the corn belt States, but the work will be well under way by December 1. In these States it is proposed to make periodical estimates of the number of cattle and sheep on feed, and also to make estimates of probable movements out to market.

The general plan for forecasting the probable movement of cattle and sheep in feed lots will be briefly as follows:

Each State statistician will first determine from railroad records of movement and elsewhere the number of head shipped out in preceding years during the period for which an estimate is to be made. A considerable number of live stock reporters in each area or around each shipping point will be secured from whom reports will be obtained in two ways. First, as to their own individual operations and second, as to the situation in the territory in which they reside. From these reports the percentage of increase or decrease compared with the preceding year or usual year will be determined and applied to the railroad record of movement of the previous year to determine the number to be shipped or available for shipment. In sections where practically all the cattle which are fattened are shipped in, the railroad station record of receipts will be a very valuable aid. The reports required by law to be made to State Live Stock Sanitary Commissions or similar organizations of stock shipped in for feeding will also be useful in making such estimates.

REVIEWS.

Costs, Profits and Practices of the Can-House Tomato Industry in New Jersey. New Jersey Bulletin No. 353. By FRANK APP AND ALLEN G. WALLER.

The bulletin gives a very thorough analysis of the tomato business along these lines: the distribution of the crop with the economic reasons therefor; the development of the crop since 1900; the price which has been paid; the amount of the pack in various years and the cost of production for the State for each of the three years studied. Description of methods and practices in growing the crop are also given and conclusions drawn as to which methods are most practical and economical.

The center of the tomato growing industry is the south Atlantic States with Maryland and New Jersey leading in importance. Another important area is in southern Indiana while California is rapidly coming to the front as a producing section. High freight rates are having a big influence in forcing a wider distribution of the producing areas because of the relatively low value of the canned product.

Practically all can house tomatoes are grown under contract with the canners. Prices prior to the war were very uniform in the various States but during the war prices were relatively very much higher on the Atlantic coast. This was due to the position on the seaboard and also to the associations of growers which helped to hold up the price.

The tomato industry seems to be greatly affected by the weather, production in New Jersey being 5.1 tons per acre in 1918 and 2.6 tons in 1919. This naturally results in throwing tremendous burdens on the canners and results in as much as 70 per cent variation in the wholesale price of canned tomatoes from one year to the next. The canners due to this fluctuation often make heavy profits as was the case during the early war time years but may lose heavily as a result of having a heavy pack at a high contract price. Under the contract system the canner naturally absorbs the risk and as many of the canners have small plants and capitalization this results in frequent losses. The authors rightly think that some more

equitable scheme of dividing up the risk among producer and canner would be a step in the right direction.

The production cost of the tomato crop was found to vary very little from year to year up until harvest time. The harvest labor due to the varying yields naturally varied greatly and the final ton cost of production varied considerably from year to year. Much hand labor and fertilizer is involved in the production of the crop in New Jersey, these items being the heaviest costs. According to three-year averages the production costs are distributed as follows: Man labor, 32.1 per cent; horse labor, 14.4 per cent; manure and fertilizer, 26.17 per cent; land rent, 8.2 per cent; machine labor, 4.6 per cent; truck and tractor labor, 3.7 per cent.

A great variation between the costs of production of individual growers was found every year, some men producing at a loss every year. From their study of the farms included in the three-year study the authors conclude that the road to increased profit for the grower lies in reducing his costs. This may apparently best be done by studying to reduce man labor costs through growing a minimum of not less than eight acres and also by using larger machinery. The heavy manure costs may be reduced by substituting cover crops for purchased manure which is growing scarce. Apparently the best means of reducing cost per ton is in increasing yield per acre and the following recommendations based on the methods of the most successful growers are given:

1. Selection of seed from strong plants in the field in order to build up high yielding strains.
2. Early planting and frequent cultivation.
3. Spraying to control lice and fungi.
4. Use of cover crops.

The bulletin is well illustrated throughout and has voluminous data bearing on the subject. The cost data is presented in quantities rather than values, which will add much to its future value.

More cost studies such as this should be made of important agricultural industries of both the farm production and manufacture. This should lead to a more sympathetic understanding of the problems involved and should result in better cooperation among all parties within the industry.

R. F. TABER,
Ohio State University.

The Rural Community. By LLEWELLYN MACGARR, M. A. (New York: Macmillan Company, 1922, Pp XV + 239, $1.80.)

The rural community in America, as a type, is so elusive, as yet so embryonic, that generalization regarding it is difficult. One is likely to begin with the community and end in a discussion of rural life in general. Thus the author of this book under the title, "The Rural Community," has given us an introduction to certain rural life topics, particularly the survey, schools, the socially inadequate classes, and certain economic and social forces which influence rural progress. There are also chapters on the national importance of rural life, rural vs. urban and characteristics of rural communities. The treating of these topics obviously necessitates a topical rather than a community point of view and as the writer shifts from the one-room school district to the township, the county, and occasionally the trade area, the community point of view is very much submerged if not altogether lost, as in the case of roads which are treated from the standpoint of their development in the State and Nation but with little local application.

The book seems to have been written primarily for teachers' reading circles and study clubs, and the author has evidently selected her material with a view to its utility for such groups. It should prove valuable, however, for class work in rural high schools.

The book is admirable in many respects. It is well written, accurate, progressive, and mechanically attractive. The author sees the rural life problem as one of leading rural people to secure for themselves adequate means, and with the means to live more completely. One of the strongest features of the book is the wealth of supplementary material following each chapter, in the form of questions, bibliography, and outlines for local study. The chapters on the survey and the school are well done. One wishes that certain other phases of rural life had been treated as thoroughly.

The author makes the church one of the "three socially fundamental institutions of our present civilization" (p. 81), but devotes a scant six pages to the *rural* church. It is confusing to classify children as *normal, subnormal* and *abnormal* (p. 107). The discussion on tenancy scarcely gets into its

social effects. One misses any treatment of so vital a topic as physical health. Inadequate emphasis is given the chapter on "Constructive Social Forces in Farm Life," the economic forces coming in for a much better share.

C. E. LIVELY,
Ohio State University.

The results of an extension method of working out an agricultural program is reported in a recent Farm Management publication, "Agriculture in Ohio and Switzerland Counties," by W. V. Kell, Purdue University.

A farm household account book has been published by the Extension Service, Arkansas University, to fill the needs of the housewife, and will be used beginning January 1, 1923. The pages of this book are in duplicate and each alternate sheet is perforated so that the carbon copy can be torn out at the end of each month and sent to the Agriccultural College at Fayetteville.

A farm account book for the use of the farmer has been prepared and will be printed before January 1. This book has duplicate sheets and perforated sheets like the household account book. A special effort is being made to get a large number of accounts sent in to the college during the coming year.

Professor Theodore Macklin wishes to add to the list of marketing bulletins published in the July issue the following:

California Agricultural Experiment Station Circular No. 217—Methods of Marketing Vegetables in California, by S. S. Rogers, January, 1920.

Circular No. 222—Fundamental Principles of Cooperation in Agriculture, by G. Harold Powell, October, 1920.

University of Illinois—Studies in Social Science, Vol. 8, No. 1, Cooperation and Other Organized Methods of Marketing California Fruit and Other Products, by J. W. Lloyd.

United States Department of Agriculture—Farmers' Bulletin No. 1144, Cooperative Marketing. O. B. Jensness.

The International Yearbook of Agricultural Statistics, 1909-1921. INTERNATIONAL INSTITUTE OF AGRICULTURE, Rome, 1922.

This is the most complete work in existence on international agricultural statistics, since it is the result of the most extensive and, at the same time, the most detailed research yet devoted to this study.

The *Yearbook* comprises about 850 pages in octavo. The statistics it includes are those of production and trade throughout the last thirteen years, for the chief agricultural products, and among others, those of cereal crops, potatoes, sugar, oilseeds, coffee, cocoa, jute, cotton, rubber, fiber producing plants, tobacco, etc.

The *Yearbook* also comprises international statistics of live stock, in detail, as well as those of fertilizers and chemical products employed in agriculture.

A special chapter deals with *Prices* of the principal products on the most important markets of the world; the rates of ocean freight and of exchange also appear. This chapter comprises also eight tables of equivalents.

The price of this volume is *two dollars* and can be obtained direct from,

THE INTERNATIONAL INSTITUTE OF AGRICULTURE
(Subscriptions and Publications Department)
Villa Umberto I.
Rome, Italy.

The editor of the Journal has received 100 copies of the International Yearbook of Agricultural Statistics for sale in this country. Copies may be had for $2 plus postage (7 cents). Money orders or checks should be made payable to O. M. Ford, Secretary, and orders for copies of the Yearbook should be directed to the same in care of the Editor of the Journal of Farm Economics, Bureau of Agricultural Economics, Washington, D. C.

WALTER FREDERICK HANDSCHIN

The one clear call for Walter Handschin came not with sunset and evening star. For him the light of life was at its full forenoon. But Walter Handschin, the true friend, the ripening scholar, the sound counselor, has answered that one clear call.

To recite what he did is beyond the scope of these few words. Still less have we the power to make plain that which he was.

As a research man and writer, he left his imprint on bulletins, articles and addresses. He was an outstanding leader of economic thought in the field of agricultural extension work. He was a frequent contributor to the farm press.

As vice-director of agricultural extension at the University of Illinois since 1914, Handschin's influence permeated widely in the upper Mississippi Valley. As professor of farm organization and management, he both performed and inspired work that was of high quality.

Born near Calumetville, Wisconsin, January 10, 1880, Handschin was a student in the State universities of Wisconsin, Minnesota and Illinois. From 1908 to 1911 he was assistant professor of animal husbandry at Minnesota and for the next four years associate in the same subject at Illinois. After receiving the bachelor of science degree at the latter institution, he applied himself to agricultural economics and planned to spend the present winter in final work for the doctorate. His vigorous frame gave way, however, before repeated attacks of influenza and finally Bright's disease. On August 1, 1922, the end came suddenly.

The blow falls most heavily upon Mrs. Handschin and the three children—two sons and a daughter.

An estimate of his personal qualities can be gained from the following heartfelt tribute in the Breeder's Gazette of August 10:

"We seldom see in one man the combination of a big, kind, warm heart, an open, clear, quick, trained and logical mind, indefatigable energy, a fine physique, confident patience, genial humor, firm seriousness without fanatical zeal, and an abiding but critical faith in our muddling human race."

Such a personality is a dynamic and an abiding force that will long inspire those whose part it is to "carry on."

NEWS NOTES.

The experience of Indiana and ten other States has induced farm management workers at Purdue to adopt this year the more simplified farm record book which was used a few years ago before there was such a great demand for income tax data.

R. H. Rogers, of Purdue, B. S. A. '22, was added to the staff September 1. He is a half-time assistant and is working for an advanced degree with farm management as major and economics as minor.

R. E. Johnson, Purdue, M. S. A. '22, was advanced to instructor of Federal Board students who are taking farm management at Purdue University.

Six candidates are registered for advanced work in farm management and economics at Purdue. Four of the number plan to complete their university work next June.

Dr. A. B. Cox, chief of the Division of Farm and Ranch Economics, in the Texas Experiment Station, has resigned to accept an appointment in the Bureau of Agricultural Economics as agricultural economist to do research work in cotton marketing.

Mr. L. P. Gabbard, of the University of Wisconsin, has been employed to take up the work left by Dr. Cox, and will make a very comprehensive study of crop-farming economics as practiced in cotton farming on the black prairies of Texas.

Professor Buechel, head of the agricultural administration course, in the Texas A. & M. College, received his Ph.D at Wisconsin in July.

The agricultural administration course is experiencing a very rapid growth at the Texas A. & M. College. From an enrollment of about thirty a year ago it has increased to upwards of two hundred at present. Four new men have been added to the teaching staff of the three departments constituting the course, two in agricultural economics and one each in rural sociology and farm management.

The courses offered by the newly organized Department of Farm Economics at the South Dakota State College are as follows: Farm record keeping, agricultural economics, princi-

ples of marketing farm products, cooperative management, principles of farm organization and management, advanced course in farm organization and management, rural sociology, farm economic problems (seminar), farm management and farm record keeping (given to the students in the school of agriculture).

Mr. Rush F. Wagner, M.S., Ames, Iowa, was added to the staff of the South Dakota College beginning September 1 and will assist with teaching and investigational work in farm economics.

The Department of Farm Economics is making a survey of feeder cattle and sheep and wool ranching in the western part of the State. Returns from this type of ranching, together with cost of production of specific products, are being determined in connection with the survey.

General farm business surveys will be repeated in Brown and Jones counties, South Dakota, this winter and a special investigation of the costs and possibilities in potato growing for the potato section of the State is contemplated.

Mr. John Hitchcock has been secured for the farm management investigational work that is being carried on by the University of Vermont and the United States Department of Agriculture, Bureau of Agricultural Economics. Mr. Hitchcock takes the place of Mr. C. R. Carlton, who has become county agent in Washington County, Vermont.

The Department of Agricultural Economics, of the Kansas Experiment Station, has entered upon cooperative arrangements with the Bureau of Agricultural Economics of the United States Department of Agriculture and the Food Research Institute of Leland Stanford University, for the study of wheat marketing in Kansas. Research in this field was begun nearly two years ago and the project as outlined covers the field of wheat marketing from the threshing machine to the primary markets. One phase of the project dealing with farm storage problems has been completed and a bulletin covering this work, by Professor R. M. Green, will be available in the near future.

The funds placed at the disposal of the Experiment Station by the Food Research Institute has enabled the Department of Agricultural Economics to add another man to its research

force. H. I. Richards has been chosen for this position. He was graduated from the Kansas State Agricultural College last June, agricultural economics having been his major study.

One part of this project has to do with the cost of handling grain in local elevators. As the study progressed it became more and more evident that existing methods of determining and allocating joint costs of handling grain were unsatisfactory and that new methods would have to be worked out in order to get satisfactory data on this phase of the grain marketing problem.

The Cost of Marketing Division of the Bureau of Agricultural Economics has been keenly aware of this problem and its research men have been endeavoring for sometime to find a satisfactory solution. Since this was a common problem of the Cost of Marketing Division and the U. S. Bureau of Agricultural Economics Professor Green spent several weeks in Washington with government accountants working out more satisfactory methods of research bearing upon this problem.

W. E. Grimes, professor in charge of the Department of Agricultural Economics, Kansas State Agricultural College, returned September 1 from his year's leave of absence, which was devoted to graduate work at the University of Wisconsin. Eric Englund, who was temporarily in charge of the department during Professor Grimes' absence, will remain with the department in charge of land economics work. Work on parts of this project will be carried on in cooperation with the Division of Land Economics, Bureau of Agricultural Economics.

The addition of one man to the teaching staff of the department has been made. The work of the department is so organized that each member of the staff in residence at the college has a combination of research work and teaching. The staff now consists of four men in residence and four field men.

E. L. Rhoades, extension specialist, has been granted a year's leave of absence, beginning October 1, to take graduate work in the University of Chicago.

Mr. J. F. Hariott has come to Iowa State College from Cornell University to occupy the Farm Bureau Federation fellowship in dairy marketing. Mr. Lawrence Meyers of the University of Minnesota has undertaken work as a research fellow on the Experiment Station staff.

Mr. W. W. Weaver, of the Kansas Agricultural College, and Mr. H. G. Loomer, of Wisconsin University, will occupy one-half time assistantships in rural sociology at Iowa State College.

Mr. V. C. Pinkham, from the Connecticut Agricultural College, and Mr. A. H. Lindsey and Albert Mighell, both of the University of Illinois, have scholarships at Iowa State College and will do graduate work along marketing lines.

Mr. Knute Bjorka, formerly of the University of Minnesota, will devote his time, primarily to statistical work, spending one-half of it as an experiment station assistant and the balance as assistant professor of agricultural economics.

Mr. Elmer J. Working, who secured his master's degree from Iowa State College in June of this year, assumed his duties as experiment station assistant on October first.

Mr. Arthur D. Lowe, an instructor at the University of Pennsylvania, spent three months at Iowa State College during the past summer as experiment station assistant. During this time he made a special investigation of live stock freight rates and traffic conditions in the State of Iowa under the direction of Dr. E. G. Nourse.

A. L. Walker, assistant professor of farm management at Iowa State College, has resigned to undertake graduate work in land economics and public finance at the University of Wisconsin. Mr. Guy M. Renshaw, who finished his undergraduate work at Iowa State College in June, 1922, succeeds him at Iowa State College.

During July the Agricultural Economics Department participated in a series of economic short courses, which were held for county agents. Dr. E. G. Nourse reported on the research work in grain marketing, which is being conducted by his department; Dr. John Brindley presented the subject of public financing; Mr. William H. Stacy outlined the program which will be followed by the Rural Organization Department during the coming year and S. H. Thompson discussed extension methods in marketing.

This year students can major in agricultural economics at the New Jersey State College of Agriculture. The courses being given are farm accounting, farm organization, farm management, rural sociology, argricultural eco-

nomics, economics of agricultural marketing, farmers' organizations (farmer movements). Most of these courses have not actually been given before and the instruction work is being taken care of by Professor App and Professor Keller.

A study is being made of the potato industry of New Jersey by the State Department of Agriculture, the Agricultural College and Experiment Station, and the State Federation of County Boards of Agriculture.

Mr. Roscoe J. Saville, who received his B. S. degree from the University of Missouri last spring and who is taking graduate work in the farm management department there, has been appointed instructor in farm management in the Farm Crops Department at North Carolina College. He will take up his new duties on October first.

Mr. R. M. Green, now at the Kansas Experiment Station doing marketing, spent the summer term at the University of Missouri completing his work for a master's degree.

B. G. Southwick, formerly farm management demonstrator in Massachusetts and for three years county agent in Hartford County, Connecticut, has been on leave of absence for four months for the purpose of organizing the Connecticut Valley Tobacco Growers' Association. The organization of this association has just been completed with five year contracts covering more than 75 per cent of the sun grown tobacco acreage of the Connecticut Valley.

The Department of Agricultural Economics at Connecticut Agricultural College has completed a survey and report on egg marketing on Connecticut farms.

Mr. Paul Putman who for two years has been student assistant in research work in farm management at the Connecticut Agricultural College has been retained since his graduation as a member of the Department of Farm Management.

The Department of Farm Management, Connecticut Agricultural College, is working on the third year of a detailed cost account study of fifteen Connecticut farms. At present the data is being tabulated and summarized. Some of this information will probably be published in pamphlet form and in newspaper articles by spring.

Dr. C. E. Ladd and Mr. M. P. Rasmussen, of the Department of Agricultural Economics and Farm Management at Cornell University, have begun a study of the cost and methods of marketing potatoes in New York State. The work is being carried on in cooperation with the Bureau of Agricultural Economics, U. S. Department of Agriculture.

Mr. Roger B. Corbett, Cornell, '22, has begun a study of the cost of marketing apples through the Western New York Fruit Growers Packing House Association, Inc. This work is being carried on by the Department of Agricultural Economics and Farm Management at Cornell University in cooperation with the Western New York Fruit Growers Packing House Association, Inc.

Mr. C. G. McBride, formerly assistant in the Department of Agricultural Economics and Farm Management at Cornell University, has accepted a position as assistant professor of marketing in the Department of Rural Economics at Ohio State University. Mr. McBride obtained his M. S. A. at Cornell in September, 1922.

Mr. H. S. Gabriel, formerly instructor in the Department of Agricultural Economics and Farm Management at Cornell University, has accepted a position as associate agricultural economist in the Bureau of Agricultural Economics for research in transportation.

Mr. E. L. Moffitt, associate professor of Farm Management Extension, has been granted leave of absence for nine months to pursue graduate work in agricultural economics, and left State College, Pa., the latter part of September to take up his studies at the University of Wisconsin.

The dean and director of the School of Agriculture and Experiment Station of the Pennsylvania State College has recommended to the board of trustees that there be established in the college a department of agricultural economics and farm management and that the work now conducted in the two lines by the Department of Agronomy and the Department of Rural Life be combined in the proposed new department.

M. O. Pence, farm management demonstrator in Delaware, with the assistance of the county agents of that State and in

cooperation with the Division of Farm Organization, United States Bureau of Agricultural Economics, will make a survey analysis of the business of a number of farms in Sussex County in December.

Mr. F. F. Elliott, who has had charge of the farm management extension work in Illinois, is taking graduate work in agricultural economics at Harvard during the present year. Mr. Elliott completed his master's work at Illinois in 1920. During the coming year Mr. R. L. Donavon, who assisted Mr. Elliott with the extension work, will have charge of the extension work in farm management.

Mr. H. C. M. Case, formerly in charge of farm management extension work, United States Department of Agriculture, and who during the past year has been taking graduate work at Wisconsin and Cornell is now acting in charge of the Department of Farm Organization and Management, University of Illinois.

Farm management tours have proven a profitable and popular feature of extension work in farm economics in Kentucky this season. Two successful tours were carried on by Mr. C. U. Jett, farm management demonstrator, during the month of September; one in Fleming County, central Kentucky, and one in Kenton County, northern Kentucky.

At the recent State fair at Louisville, Kentucky, the farm economics section of the College of Agriculture exhibit aroused a considerable amount of interest among visiting farmers. Farm profits as affected by efficient farm organization were represented by the water in a huge white barrel, holding four hundred gallons. The staves were marked to represent various factors, including crop yields, production of live stock, cost of labor, diversity, volume of sales, use of capital, etc. In a number of the staves were large leaks, through which the profits were escaping copiously. A small booklet was handed out, suggesting ways for stopping the leaks.

The marketing idea was set forth in a series of stair steps, upon which were marked the various "steps in marketing," including assembling, grading, transporting, financing, storing, etc. Farmers standing around the exhibit were heard to discuss among themselves as to whether any of these steps could be dispensed with, and if so, which and how.

The University of Arizona, the United States Department of Agriculture and the farmers of the Salt River Valley of Arizona are cooperating in a new experiment—the field grading of American-Egyptian cotton. Fields are regularly inspected by competent men and an effort is being made to so grade and classify the fields that it will be possible to have the cotton bale show an absolutely uniform lint. If this experiment proves successful it will mean a great deal to the American-Egyptian cotton industry of the United States.

Six million pounds of wool have been shipped from Arizona this year.

Dr. A. H. Benton, who for the past few years has been connected with the Agricultural College at Winnipeg, has accepted a position at the North Dakota Agricultural College in Rural Finance and Marketing beginning September 15.

The Division of Agricultural Economics at the University of Minnesota is devoting its graduate seminar to production economics the first two quarters of this year. The major emphasis will be placed upon research methods and extension methods making use of research results.

Mr. G. C. Haas, of the Minnesota Agricultural College, has accepted a position in charge of the Statistical and Graphics Section, Bureau of Agricultural Economics.

Mr. B. A. Holt is employed on a part-time basis between the Extension Division and Division of Agricultural Economics, University of Minnesota.

Mr. E. W. Gaumnitz will teach the course in cooperative accounting in the School of Agriculture, University of Minnesota, and devote the rest of his time to research work in cost of marketing in the Central Live Stock Market at South St. Paul.

Market News Service has been established with headquarters at Salt Lake City with Charles J. Hart in charge. Telegraphic reports of markets and prices are received by him, mimeographed and sent out to farmers who desire the information. The daily newspapers of Salt Lake City also publish the Market News information. It seems to be gaining in favor rapidly. The Extension Division has charge of this service.

There are four new graduate courses being offered at the Utah Agricultural College this year—Land Economics, Tenancy, Economics of Marketing, and Market Produce. In addition to these of course our regular research and seminar courses are continued this year. There are eight to twelve graduate students in each of these courses.

The Extension Division, Utah Agricultural College, has extended an invitation to the Agricultural Economics Department to cooperate with them in making out their programs of work for the year 1922-23.

A brief summary of the results of farm management demonstration work during the past year as reported by M. D. Jones, Farm Management Demonstrator of Maine, is as follows:

(1) Farm Management work has been included in every county plan of extension work in the State. (2) Local project leaders have been elected in 186 communities who have assisted in carrying on the work. (3) 246 complete farm accounts which were kept through the year have been summarized. (4) County summaries are being made for 7 counties having 20 or more accounts to include. (5) Seventeen farmers have submitted complete monthly statements on the cost of milk in their herds for the past twelve months; 12 have completed a full two years' record and 30 are reporting monthly at the present time. (6) Nineteen farmers have kept a labor distribution record distributed by enterprises through the year covering all labor on their respective farms. These books have been forwarded to the farm management demonstrator to be summarized. (7) Seven farm management schools have been held consisting of 28 sessions, with 169 people registered and a total attendance of 475. (8) Account group meetings or one session account schools have been held in 95 communities with an attendance of 570. (9) Eight hundred and twenty-nine farm accounts have been started in 210 communities where the understanding is that the record shall be submitted for summary at the close of the year. (10) 291 poultry accounts have been started, of which 260 are known to be going at this time. (11) 230 potato cost accounts have been started. The growers report weekly on blanks provided, the amount of labor used in

each operation. (12) Nineteen orchard accounts have been started on orchards set this year which are to continue until the orchard becomes of bearing age. (13) Labor record books have been started by 87 farmers. (14) Eighteen farmers have started silage corn cost accounts.

M. E. Andrews, Associate Professor of Agricultural Economics, A. & M. College of Mississippi, is on a six months' leave of absence working with the Bureau of Agricultural Economics.

J. N. Lipscomb, assisted by J. E. McLeod, has recently completed a survey study of dairy types of farming in Oktibeha County, Mississippi. Mr. Lipscomb expects to extend this same type of study to another dairy section in the State where different soil types prevail in the near future.

Professor B. F. Coen, formerly in charge of the Department of English and History, Colorado Agricultural College, has accepted the position of Associate Professor in the new Department of Economics and Sociology. Professor Coen will give special attention to the development of courses in sociology. He will also devote a part of his time to research work in sociology. One project will deal with a survey of consolidated school districts in the vicinity of Ault, Colorado. Some 70 or more records have been assembled to date in this district.

Arthur E. Albrecht, instructor of economics, College of the City of New York, has been appointed to the position of economist in the New York City office of the State Department of Farms and Markets. From 1916 to 1918 Mr. Albrecht was expert and special agent for the Federal Bureau of Labor Statistics. Since 1919 he has been an instructor at City College.

W. A. Schoenfeld has been appointed as Director of Marketing Research in the Bureau of Agricultural Economics. This position has a rank equivalent to that of assistant chief. Mr. Schoenfeld is to direct marketing research and organize further studies to be made by the commodity divisions of the Bureau.

TENTATIVE PROGRAM FOR THE AMERICAN FARM ECONOMIC ASSOCIATION MEETING

Chicago, December 28-30, 1922

The Objective in Agricultural Cost Accounting—H. C. TAYLOR.
Discussion: J. D. BLACK.
C. E. LADD.

The Problem of Rent and Interest in Cost Determination—W. E. GRIMES.
Discussion: J. I. FALCONER.
O. A. JUVE.

The Control of the Agricultural Output—H. A. WALLACE.
Discussion: G. F. WARREN.
ELWOOD MEAD.

The Use of Crop Statistics by Farmers—L. M. ESTABROOK.
Discussion: JOS. A. BECKER.

The Farmers' Income During the Past Quarter Century—DAVID FRIDAY.
Discussion: W. I. KING.
DEAN EUGENE DAVENPORT.

The Accumulation of Wealth by Farmers—L. C. GRAY.

The Possibility of a Farmer Monopoly—B. H. HIBBARD.
Discussion: J. R. HOWARD.

A Practical Basis of Land Valuation—BEN FAAST.
Discussion: R. T. ELY.

Methods of Solving Marketing Problems:
The Tariff—T. N. CARVER.
Improved Marketing Machinery—H. B. PRICE.
Price Fixing.—L. D. H. WELD.

Round Tables:
On Cotton Marketing—A. H. STONE.
On Tobacco Marketing—L. G. FOSTER.

The American Economic Association and the National Association of State Marketing Officials will meet at the same place during the same week.

The committee on teaching, of which Professor W. D. Nicholls of the University of Kentucky is chairman, would be pleased to be informed of omissions from the list of graduate students taking degrees with a major in agricultural economics. A supplementary list of reported omissions will be published in a later issue of the Journal.